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EXAMINER	
WANG, QUAN ZHEN	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,954	PAMART ET AL.	
	Examiner	**Art Unit**	
	QUAN-ZHEN WANG	2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _28 July 2007_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _24-46_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _24-46_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. **Claim 38** is rejected under 35 U.S.C. 102(e) as being anticipated by Michael Wolf (US Patent Application Publication No. 2001/0038475), referred herein as Wolf.

Regarding **claim 38**, Wolf teaches an apparatus for transmitting data on an optical fiber comprising: a plurality of monochrome transmitters, each of which has its own transmission wavelength (figure 2 teaches an embodiment wherein there are a plurality of transmitters that transmit electrical signals and modulate them on optical signals with a unique wavelength for each transmitter), with each transmitter having a slave clock (paragraphs 3 and 20 teach a master-slave approach which includes a slave clock at each transmitter); a multiplexer; and a master clock controlling the slave clocks (paragraphs 3 and 20 teach a master-slave approach which includes a master clock that controls the slave clocks).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. **Claims 24, 29-32 and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf, in view of John Hait (US Patent Application Publication No. 2002/0018259), referred herein as Hait.

Regarding **claim 24**, Wolf teaches a process for transmitting data on an optical fiber comprising multiplexing in wavelength signals coming from a plurality of monochrome transmitters, each of which has its own wavelength (figure 2 teaches an embodiment wherein there are a plurality of transmitters that transmit electrical signals and modulate them on optical signals with a unique wavelength for each transmitter) and a slave local clock (paragraph 3 teaches a slave clock in lower level network elements), wherein each slave local clock from each transmitter is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL) (paragraph 3 teaches a master clock for synchronizing slave clocks and paragraph 22 teaches a phase-locked loop as a method for synchronizing signals), said master clock controlling the clock of each slave local clock by using said phase locked loop which supplies the synchronization signal for each of the transmitters (paragraph 3 teaches the master clock and paragraph 22 teaches the PLL for synchronization purposes). However, Wolf does not teach modulating the information to be transmitted by a carrier realized per channel and formatting the multiplexed signal by an optical gate. It is well-

known in the art to modulate information at an optical source and format the information with a gate. For example, Hait teaches a device wherein modulation is performed at a source prior to multiplexing and a gate is used to format the signal (paragraph 14 teaches the modulation and gate). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wolf with the modulation and gate of Hait for an apparatus in accordance with this scheme that will work well with a wide variety of photonic modulation methods, including amplitude, phase, polarization and spatial modulation for data pulses as well as synchronization pulses (paragraph 13 teaches this advantage).

Regarding **claim 29**, Wolf and Hait teach the limitations of claim 24. Wolf further teaches a process comprising synchronizing streams (pulses) emitted by the transmitters (paragraph 5 teaches synchronization signals for synchronizing the data emitted by the transmitters).

Regarding **claim 30**, Wolf and Hait teach the limitations of claim 24. Wolf further teaches a process wherein the formatting comprises aligning the phase of signals generated by the transmitters (paragraph 22 teaches a phase locked loop that locks and aligns the phases).

Regarding **claim 31**, Wolf and Hait teach the limitations of claim 30. Wolf further teaches a process wherein the aligning is subject to ambient parameters to compensate for temporal signal variations (paragraph 22 teaches the signals being synchronized with the synchronization signals after transmission through a network that inherently includes ambient parameters).

Regarding **claim 32**, Wolf and Hait teach the limitations of claim 30. Wolf further teaches a process wherein the aligning is subject to ambient parameters to compensate for differences and variations between optical paths (paragraph 11 teaches different optical paths for the signals and paragraph 22 teaches the signals being synchronized with the synchronization signals after transmission through a network that inherently includes ambient parameters and explicitly includes different optical paths).

Regarding **claim 39**, Wolf teaches the limitations of claim 38. However, Wolf does not teach an apparatus further comprising an optical gate that receives multiplexed optical carriers and a cutting signal produced by the master clock. Wolf does teach multiplexed signals (paragraph 19 teaches a multiplexer that receives optical signals and also teaches synchronization or cutting signals) and it is known in the art to use optical gates to receive multiplexed signals. It is known in the art to use an optical gate to receive multiplexed signals. For example, Hait teaches a device wherein a gate is used to format the signal (paragraph 14 teaches the modulation and gate). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wolf with the modulation and gate of Hait for an apparatus in accordance with this scheme that will work well with a wide variety of photonic modulation methods, including amplitude, phase, polarization and spatial modulation for data pulses as well as synchronization pulses (paragraph 13 teaches this advantage).

5. **Claims 25-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf, in view of Hait and further in view of Bosotti.

Regarding **claim 25**, Wolf and Hait teach the limitations of claim 24. However, they do not teach a process further comprising formatting the data that is common and simultaneous for all carriers. It is known in the art to format data that is common and simultaneous for all carriers. For example, Bosotti teaches formatting the data that is common and simultaneous for all carriers (column 2, lines 10-36 teach aligning the phases at their peaks and troughs, a type of formatting, based on the common clock frequency between all carriers simultaneously). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teachings of Wolf and Hait with the simultaneous data formatting of Bosotti for keeping crosstalk between channels to a minimum (column 2, lines 10-17 teach this advantage).

Regarding **claim 26**, Wolf, Hait and Bosotti teach the limitations of claim 25. Bosotti further teaches a process wherein the formatting comprises optimizing the form of the signal as a function of characteristics of propagation of an associated transport means (column 2, lines 10-22 teach optimizing (by minimizing) the signal degradation by formatting the data). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further include Bosotti's teaching of optimizing the form of the signal as a function of characteristics of propagation for further carrying out the reduction of crosstalk between channels and keeping the crosstalk at a minimum (column 2, lines 10-17 teach this advantage).

Regarding **claim 27**, Wolf, Hait and Bosotti teach the limitations of claim 25. Bosotti further teaches a formatting process comprising optimizing optical parameters of the signal as a function of the characteristics of propagation of an associated transport means (column 2, lines 10-22 teach optimizing (by minimizing) the signal degradation by formatting the optical data where the signal degradation is due to crosstalk, which is an associated transport means). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teachings of Wolf and Hait with the simultaneous data formatting of Bosotti for keeping crosstalk between channels to a minimum (column 2, lines 10-17 teach this advantage).

Regarding **claim 28**, Wolf, Hait and Bosotti teach the limitations of claim 25. Bosotti further teaches a process wherein the formatting comprises an operation of stabilizing temporal parameters of data (column 2, lines 23-36 teach aligning the signal periods which are a temporal parameter of the data signal). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further combine the teachings of Wolf and Hait with the stabilization of temporal parameters of data taught by Bosotti for further suppressing noise interference to prevent noise from being introduced into the demodulated data stream (column 2, lines 41-47 teach this advantage).

6. **Claims 33-37 and 43-44** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf, in view of Hait and further in view of Mussino.

Regarding **claim 33**, Wolf and Hait teach the limitations of claim 24. However, they do not teach an embodiment wherein each element of the multiplexer is signed before multiplexing by a frequency marker applied on the phase. It is known in the art to use frequency markers applied on the phase. For example, Mussino teaches applying a frequency marker to a phase before transmitting (column 8, lines 13-17 teach phase modulating a pilot tone, which is equivalent to a frequency marker applied on the phase, and figure 1, items 6 and 7 teach the modulation as being applied before the signal enters any network or multiplexer). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teachings of Wolf and Hait with the teaching of Mussino for encoding information about bias voltage, or possibly another physical system value, onto a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage).

Regarding **claim 34**, Wolf and Hait teach the limitations of claim 24. However, they do not teach a process wherein each element of the multiplex is signed before multiplexing by a frequency marker applied on the amplitude. Mussino teaches applying a frequency marker to an optical signal's amplitude before multiplexing (column 8, lines 13-17 teach amplitude modulating a pilot tone, which is equivalent to a frequency marker applied on the phase, and figure 1, items 6 and 7 teach the modulation as being applied before the signal enters any network or multiplexer). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Bosotti with the teaching of Mussino for encoding

information about bias voltage on a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage).

Regarding **claim 35**, Wolf, Hait and Mussino teach the limitations of claim 34. Mussino further teaches a process where the marker comprises a signal with a predetermined spectrum (column 2, lines 60-61 teach the pilot tone having a predetermined frequency, or spectrum). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further include Mussino's teaching of a predetermined frequency spectrum for detecting a feedback for altering the control of the output modulation signal (column 4, lines 34-39 teach this advantage).

Regarding **claim 36**, Wolf, Hait and Mussino teach the limitations of claim 34. Mussino further teaches a process where the marker comprises a signal with a spectrum whose characteristics are a function of the disturbances undergone by the signal on a corresponding path (column 3, lines 20-25 teach looking for the presence of disturbances based on the pilot signals). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further include Mussino's teaching of looking for disturbances for restricting distortions of signals in optical lines (column 3, lines 13-19 teach this advantage).

Regarding **claim 37**, Wolf, Hait and Mussino teach the limitations of claim 34. Mussino further teaches the process where characteristics of the marker are determined to disturb a marked signal in such a manner that marking is evanescent during passage through the gate (column 8, lines 27-36 teach attenuating the pilot tone by adding it with

a phase shifted version of itself as it propagates through the gate). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further include the evanescent, or attenuating, teachings of Mussino for modifying the spectrum of the signal entering the amplifier only at the exact frequency of the pilot tone (column 8, lines 37-39 teach this advantage).

Regarding **claim 43**, Wolf and Hait teach the limitations of claim 39. However, they do not teach an apparatus wherein the optical gate comprises a detector for each marker to control characteristic of the formatting and adjustment of the phase of a corresponding path. Mussino teaches applying a frequency marker to a phase before transmitting (column 8, lines 13-17 teach a frequency marking via phase of a pilot tone, which is equivalent to a frequency marker applied on the phase, and figure 1, items 6 and 7 teach the modulation as being applied before the signal enters any network or multiplexer). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teachings of Wolf and Hait with the teaching of Mussino for encoding information about bias voltage, or possibly another physical system value, onto a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage).

Regarding **claim 44**, Wolf and Hait teach the limitations of claim 39. However, they do not teach an apparatus wherein the optical gage comprises a spectral analyzer for the marker to adjust the phase of each path. Mussino teaches a spectral analyzer for the marker to adjust the phase of each path (column 4, lines 5-8 teach a linearizer circuit that adjusts the frequency-dependent input into a pre-determined output,

inherently performing a spectral analysis and system response to the signal, and column 5, lines 16-21 teach the linearizer circuit adjusting the phase of the frequency-marking pilot signal). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teachings of Wolf and Hait with the teaching of Mussino for predistorting signals to reduce distortions in transmission (column 2, lines 37-45 teach this advantage).

7. **Claims 40-42** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf, in view of Mussino.

Regarding **claim 40**, Wolf teaches the limitations of claim 38. However, Wolf does not teach an apparatus further comprising frequency marking circuits for each element of the multiplex. Mussino teaches a frequency marking circuit for a transmitter (column 8, lines 48-53 teach a quartz oscillator element for generating pilot tones for imposing a lower-frequency modulation on a signal prior to entering a network or Application/Control Number: 10/536,954 Page 12 Art Unit: 2613 multiplexer, wherein the oscillator is inherently part of a circuit requiring an active power source). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wolf with the teaching of Mussino for encoding information about bias voltage, or possibly another physical system value, onto a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage).

Regarding **claim 41**, Wolf and Mussino teach the limitations of claim 40. Mussino further teaches the frequency marking circuit applying the marking signal onto a

transmitter (column 8, lines 55-57 teach the marking signal being applied to the modulator of a transmitter). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to further include Mussino's teaching for encoding information about bias voltage, or possibly another physical system value, onto a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage). Wolf and Mussino do not teach a plurality of frequency marking circuits and transmitters. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use multiple circuits for the multiple transmitters of Wolf's embodiment (paragraph 19 teaches the plurality of signals being transmitted from multiple transmitters) since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8.

Regarding **claim 42**, Wolf and Mussino teach the limitations of claim 40. Wolf further teaches a synchronizer for each path (paragraph 19 teaches the system as having a synchronizer device that sends synchronization signals over the network). However, Wolf does not teach a frequency marking for the synchronizer. Mussino teaches applying a frequency marker to a phase before transmitting (column 8, lines 13-17 teach a frequency marking via phase of a pilot tone, which is equivalent to a frequency marker applied on the phase, and figure 1, items 6 and 7 teach the modulation as being applied before the signal enters any network or multiplexer). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wolf with the teaching of

Mussino for encoding information about bias voltage, or possibly another physical system value, onto a pilot tone in an optical signal (column 2, lines 59-67 teach this advantage).

8. **Claim 45** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wolf in view of Takeuchi.

Regarding **claim 45**, Wolf teaches the limitations of claim 38. Wolf further teaches a demultiplexer (paragraph 20 teaches a demultiplexer). However, Wolf does not teach an optical converter and a clock connected to at least one of the converters. Takeuchi teaches an optical converter and a clock connected to the converter (column 7, lines 23-30 teach the conversion of a clock signal to an optical transmission). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Wolf with the teaching of Takeuchi for performing packet switching in an optical network wherein the retiming of packet data in the output section is facilitated and an increase in the scale of the circuitry is suppressed (column 4, lines 31-37 teach this advantage).

9. **Claim 46** is rejected under 35 U.S.C. 103(a) as being unpatentable over Mussino in view of Wolf.

Regarding **claim 46**, Mussino teaches a counter-reaction circuit for an apparatus that transmits data on an optical fiber and which generates a frequency marker (column 2, lines 59-67 teach applying a sinusoidal pilot tone signal, or frequency marker) for

injecting a disturbing spectral signal of a transmitter comprising a detector (column 2, line 63 teaches the detector) for an output signal of a gate that acts on an automatic controller of a transmitter phase that obtains a selected spectral transformation of each marker (column 5, lines 16-21 teach a linearizer circuit which receives a spectral signal as an input and automatically performs operations according to predetermined values to operate on the phase). However, Mussino does not teach an embodiment comprising a plurality of monochrome transmitters, each of which has its own transmission wavelength, with each transmitter having a slave clock. It is known in the art to use a plurality of monochrome transmitters with their own transmission wavelengths with a slave clock. For example, Wolf teaches an apparatus with a plurality of monochrome transmitters (figure 2 teaches an embodiment wherein there is a plurality of transmitters that transmit electrical signals and modulate them on optical signals with a unique wavelength for each transmitter and paragraphs 3 and 20 teach a slave clock at the transmitting nodes in a master-slave relationship). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to combine the teaching of Mussino with the multiple transmitters and slave clock of Wolf for synchronizing a plurality of transmitted wavelengths to different stations (paragraph 19 teaches this advantage).

Response to Arguments

10. Applicant's arguments filed 7/28/2008 have been fully considered but they are not persuasive.

Regarding claim 38, Applicant argues that "Wolf states that 'electrical-to-optical converter E/O1 is supplied with a synchronization clock generated in a primary reference source. The synchronization clock is transmitted to network element NE2 at the reserved wavelength λ1'(Paragraph [0019])". However, that teaching does not conflict with a master clock controlling slave clocks of transmitters. For example, Wolf specifically discloses the master-slave technique can be applied in different levels in the communication system (paragraph 0003). In each node, the transmitters are inherently controlled by the master clock of the node.

Applicant further argues that "each electrical-to-optical converter of Wolf does not include its own local clock". Examiner respectfully disagrees. In accordance with MPEM, "<u>The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103</u>" (MPEP §2112[R-3]). For the instant case, Wolf specifically and explicitly discloses:

> "[0019] Turning now to FIG. 2, there is shown a portion of network element NE1 of FIG. 1. Network element NE1 comprises n electrical-to-optical converters E/01, E/O2, . . . , E/On and m optical-to-electrical converters O/E1, O/E2, . . . , O/Em. The n electrical-to-optical converters E/O1, E/O2, . . . , E/On serve to convert the electric signals transmitted via the interface units of network element NE1 from electrical to optical form. To that end, the first interface unit is connected to and permanently associated with electrical-to-optical converter E/O1, the second interface unit is connected to and permanently associated with electrical-to-optical converter E/O2, etc. Each electrical-to-optical converter E/O1, E/O2, . . . , E/On generates a different wavelength. All wavelengths λ1 to λn are combined in a multiplexer MUX, which is implemented as an optical combiner, for example. ... If, for example, information is to be transferred to network element NE2 over two optical channels, use will be made of, e.g., wavelengths λ2 and λ3, which will be switched through to network element NE2 by optical cross-connect O-XC. If, for example, information is to be transferred over two further optical channels to network element NE3, use will be made of, e.g., wavelengths λ4 and λ5, which will be

> switched through by optical cross-connect O-XC. In a further time period, information can, for instance, be transferred to network element NE2 at wavelengths λ2 and λ5 and to network element NE3 at wavelengths λ3 and λ4. ....”

Therefore, in order to correctly sending information from one node to another, each electrical-to-optical converter of Wolf inherently has its own local clock and the clock is inherently controlled by the master clock of the node, which is synchronized with other nodes through the a synchronization clock carried at its reserved wavelength (for example, λ1).

For the above reasons, the rejection of claim 39 still stands.

Regarding claim 24, Applicant argues, “The synchronous transmission described by Wolf varies distinctly in several areas from the data transmission process of Claim 24. On Page 4 of the Office Action of April 16, 2008, Wolf's multiple electrical-to-optical converters E/O1, E/O2, ..., E/On with respective wavelengths λ1, λ2, ... λn are equated to the plurality of monochrome transmitters that are recited in Claim 24. As is further recited in Claim 24, each transmitter has a slave local clock that "is controlled by a synchronization circuit comprising a master clock and a phase locked loop (PLL)." However, each electrical-to-optical converter of Wolf does' not include its own local clock. Instead, only one electrical-to-optical converter (E/O1 in the example above) is designated to carry a synchronization clock at its reserved wavelength (λ1). Thus, as each electrical-to-optical converter does not have its own slave local clock, each electrical-to-optical converter cannot be individually controlled by a synchronization circuit with a master clock and a PLL.” However, in accordance with MPEM, “The express, implicit, and inherent disclosures of a prior art reference may be relied upon in

the rejection of claims under 35 U.S.C. 102 or 103" (MPEP §2112[R-3]). For the instant case, Wolf specifically and explicitly discloses:

> "[0019] Turning now to FIG. 2, there is shown a portion of network element NE1 of FIG. 1. Network element NE1 comprises n electrical-to-optical converters E/01, E/O2, . . . , E/On and m optical-to-electrical converters O/E1, O/E2, . . . , O/Em. The n electrical-to-optical converters E/O1, E/O2, . . . , E/On serve to convert the electric signals transmitted via the interface units of network element NE1 from electrical to optical form. To that end, the first interface unit is connected to and permanently associated with electrical-to-optical converter E/O1, the second interface unit is connected to and permanently associated with electrical-to-optical converter E/O2, etc. Each electrical-to-optical converter E/O1, E/O2, . . . , E/On generates a different wavelength. All wavelengths λ1 to λn are combined in a multiplexer MUX, which is implemented as an optical combiner, for example. ... If, for example, information is to be transferred to network element NE2 over two optical channels, use will be made of, e.g., wavelengths λ2 and λ3, which will be switched through to network element NE2 by optical cross-connect O-XC. If, for example, information is to be transferred over two further optical channels to network element NE3, use will be made of, e.g., wavelengths λ4 and λ5, which will be switched through by optical cross-connect O-XC. In a further time period, information can, for instance, be transferred to network element NE2 at wavelengths λ2 and λ5 and to network element NE3 at wavelengths λ3 and λ4. ...."

In order to correctly sending information from one node to another, each electrical-to-optical converter of Wolf inherently has its own local clock and the clock is inherently controlled by the master clock of the node, which is synchronized with other nodes through the a synchronization clock carried at its reserved wavelength (for example, λ1). Furthermore, Wolf explicitly discloses to synchronize electrical signals using PLL (paragraph 0022). Therefore, it would have been obvious for one of ordinary skill in the art to synchronize clocks of transmitters with the mast clock of the node using PLL.

For the above reasons, the rejection of claim 24 still stands. For the same reasons, the rejections of claims 25-46 still stand.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to QUAN-ZHEN WANG whose telephone number is (571)272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11/13/2008
/Quan-Zhen Wang/
Examiner, Art Unit 2613